Notice of Allowability	Application No.	Applicant(s)	
	09/873,510	KISHI, TOMOAKI	
	Examiner	Art Unit	
	Michael B. Holmes	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *August 09, 2004*.

2. ☒ The allowed claim(s) is/are *2-23*.

3. ☐ The drawings filed on _____ are accepted by the Examiner.

4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☒ All b) ☐ Some* c) ☐ None of the:
      1. ☒ Certified copies of the priority documents have been received.
      2. ☒ Certified copies of the priority documents have been received in Application No. *09/873,510* .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☒ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☒ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

UNITED STATES PATENT AND TRADEMARK OFFICE

P.O. Box 1450, Alexandria, Virginia 22313-1450 - WWW.USPTO.GOV

Examiner's Detailed Office Action

1. Claims 2-23 are allowed.

REASONS FOR ALLOWANCE

2. The following is an Examiner's statement for reasons for allowance:

The closest prior art *Yamaguchi et al.* (USPN 6,064,996), *Yamaguchi et al.* (6,032,139), *Kamihira et al.* (USPN 6,021,369), *Schaffer et al.* (USPN 5,864,833), *Schaffer et al.* (USPN 5,909,674), *Schaffer et al.* (USPN 6,275,815), *Schaffer et al.* (USPN 6,282,528), *Koza et al.* (USPN 6,564,194) and *Anthony Tzes, Pei-Yaun Peng,* and *John Guthy,* "Genetic-Based Fuzzy Clustering for DC-Motor Friction Identification and Compensation, IEEE Transactions on Control Systems Technology, Vol. 6, No., 4, July 1998, does not teach or render obvious applicant's claimed invention.

3. Specifically, in the past, optimal values of a characteristic of a control module (namely, parameter values for deciding input-output relationship of the control module) to control a controlled system were determined by experiment at the stages of design or setting before

shipment, so that users of a product comprising a controlled system were assumed and the users' characteristics (preference, technique, personality, and use) could be met. However, with the diversity and advancement of recent technology, the conventional method of deciding optimal values of a characteristic of the control module by experiment brings about difficulty for optimizing the control module, and requires a lot of time. Since personal characteristics or preferences vary from one person to another, the conventional control method cannot provide a characteristic of products which satisfy all users.

4. With regards to claim 2, *Yamaguchi et al., Kamihira et al., Schaffer et al., Koza et al.,* & Tzes et al. does not disclose " ... *(a) configuring a first generation of chromosomes coding for the control parameters by preselecting genes constituting the first generation of chromosomes from a selection space used as a gene pool, and activating the machine using the first generation of chromosomes said genes being defined by coordinates in the selection space, (b) selecting and scoring adapted chromosomes by evaluating, each chromosome based on signals indicative of performance of the machine, (c) setting a search area in the selection space in accordance with the score(s) under predetermined rules, (d) selecting genes for a subsequent generation of chromosomes within the search area. and operating the machine using the subsequent generation of chromosomes, and the coordinates and/or the size of the search area in the selection space are changed in accordance with the score(s) of the adapted chromosome(s).*"

5. With regards to claim 3, *Yamaguchi et al., Kamihira et al., Schaffer et al., Koza et al.,* & *Tzes et al.* does not disclose " ... *wherein the selection of genes is conducted randomly in the search area.*"

6. With regards to claim 4, *Yamaguchi et al., Kamihira et al., Schaffer et al., Koza et al., & Tzes et al.* does not disclose " ... *wherein the selection of genes is conducted in the search area based on the coordinates of the genes of the adapted chromosome(s).*"

7. With regards to claim 5, *Yamaguchi et al., Kamihira et al., Schaffer et al., Koza et al., & Tzes et al.* does not disclose " ... *wherein the central coordinates of the search area of the subsequent generation is set at the coordinates of the genes of the adapted. chromosome(s) in the selection space.*"

8. With regards to claim 6, *Yamaguchi et al., Kamihira et al., Schaffer et al., Koza et al., & Tzes et al.* does not disclose " ... *wherein the central coordinates of the search area of the subsequent generation is set in the selection space at coordinates calculated from weighted averages of the coordinates of the chromosomes of the current generation based on their scores.*"

9. With regards to claim 7, *Yamaguchi et al., Kamihira et al., Schaffer et al., Koza et al., & Tzes et al.* does not disclose " ... *wherein the size of the search area for a subsequent generation is changed in accordance with the scores of the chromosomes of the current generation.*"

10. With regards to claim 10, *Yamaguchi et al., Kamihira et al., Schaffer et al., Koza et al., & Tzes et al.* does not disclose " ... *wherein the size of the search area for a subsequent generation is changed in accordance with a distance between the central coordinates of the search area for the current generation and the central coordinates of the search area for the subsequent generation.*"

11. With regards to claim 11, *Yamaguchi et al., Kamihira et al., Schaffer et al., Koza et al., & Tzes et al.* does not disclose " ... *wherein the size of the search area for a subsequent generation is changed in accordance . with the central coordinates of the search area of the subsequent generation.*"

12. With regards to claim 12, *Yamaguchi et al., Kamihira et al., Schaffer et al., Koza et al., & Tzes et al.* does not disclose " ... *wherein a group of candidate chromosomes of a subsequent generation is selected based on distances between any candidate chromosomes of the subsequent generation in the selection space.*"

13. With regards to claim 13, *Yamaguchi et al., Kamihira et al., Schaffer et al., Koza et al., & Tzes et al.* does not disclose " ... *wherein a group of candidate chromosomes of a subsequent generation is selected based on distances between chromosomes generated currently and in the past in the selection space.*"

14. With regards to claim 14, *Yamaguchi et al., Kamihira et al., Schaffer et al., Koza et al., & Tzes et al.* does not disclose " ... *wherein the distances are defined using vectors connecting any two coordinates of genes.*"

15. With regards to claim 16, *Yamaguchi et al., Kamihira et al., Schaffer et al., Koza et al., & Tzes et al.* does not disclose " ... *wherein the indicative signals are sensory signals, and a user who operates the machine scores the chromosomes based on the sensory signals.*"

16. With regards to claim 17, *Yamaguchi et al., Kamihira et al., Schaffer et al., Koza et al., & Tzes et al.* does not disclose " ... *wherein the indicative signals are electronic signals, and a device which receives the signals scores the chromosomes by comparing values of the signals with preselected target values.*"

17. With regards to claim 18, *Yamaguchi et al., Kamihira et al., Schaffer et al., Koza et al., & Tzes et al.* does not disclose " ... *wherein the machine is a motor.*"

Correspondence Information

18. Any inquires concerning this communication or earlier communications from the examiner should be directed to **Michael B. Holmes**, who may be reached Monday through Friday, between 8:00 a.m. and 5:00 p.m. EST. or via telephone at **(571) 272-3686** or facsimile transmission **(571) 273-3686** or email Michael.holmesb@uspto.gov.

If attempts to reach the examiner are unsuccessful the **Examiner's Supervisor**, **Anthony Knight**, may be reached at **(571) 272-3687**.

Michael B. Holmes
Patent Examiner
Artificial Intelligence
Art Unit 2121
United States Department of Commerce
Patent & Trademark Office

Anthony Knight
Supervisory Patent Examiner
Group 3600